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# WATER SUPPLY OUTLOOK

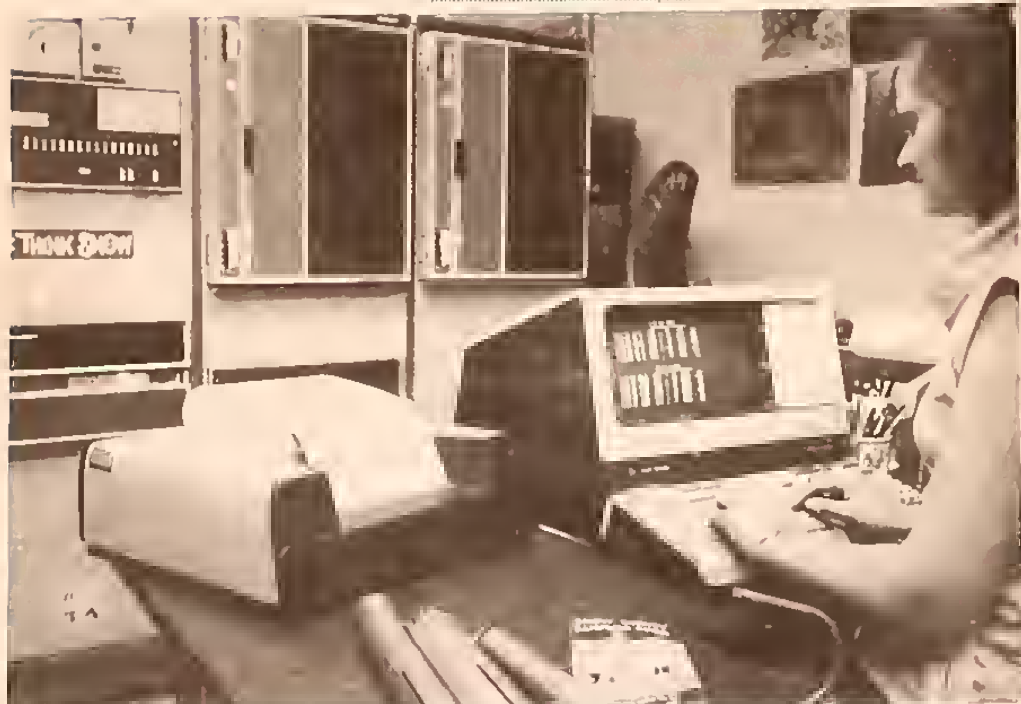
FOR  
CURRENT SERIAL RECORDS  
MONTANA

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

AS OF  
JUNE 1, 1980



Issued by

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## SPRING STORM IS A DANDY

Most mountain ranges in Montana received significant precipitation during the Memorial Day Weekend. SNOTEL sites south and west of Great Falls reported between 5 and 7 inches of precipitation. The largest amount was 7.2 inches at Boulder Mountain in the Big Belt Mountains, at an elevation of 7950 feet. Most other stations reported between 2 and 5 inches of precipitation. Almost all sites reported some new snow. The high elevation sites reported that much of the precipitation fell as snow.

The following amounts of precipitation (in inches) were reported at SNOTEL sites from the morning of May 22 through the morning of May 28:

Badger Pass	6.6	Lakeview Ridge	4.1
Beagle Springs	2.8	Lemhi Ridge	4.2
Black Bear	4.1	Lick Creek	2.4
Black Pine	3.2	Many Glacier	4.8
Bloody Dick	2.7	Mount Lockhart	4.8
Boulder Mountain	7.2	North Fork Elk Creek	5.8
Box Canyon	2.2	Northeast Entrance	1.8
Calvert Creek	2.3	Pickfoot Creek	4.8
Clover Meadow	2.7	Porcupine	4.0
Cole Creek	1.6	Rocker Peak	4.2
Combination	2.3	Saddle Mountain	3.9
Copper Bottom	4.0	Showers Falls	3.4
Copper Camp	4.7	Silver Run	1.1
Crystal Lake	4.2	Spur Park	4.5
Deadman Creek	2.4	Stahl Peak	3.3
Divide	2.9	Tepee Creek	4.1
Fisher Creek	2.5	Twelvemile Creek	2.9
Flattop Mountain	5.6	Twin Lakes	4.0
Frohner Meadow	3.7	Waldron	5.5
Grave Creek	2.8	Whiskey Creek	3.1
Hand Creek	3.7	White Mill	2.7
		Wood Creek	6.0

## STATEWIDE OUTLOOK

### STREAMFLOW FORECASTS

The cool weather, additional snowfall and moisture have helped improve Montana's water supply outlook. This additional moisture has increased the expected runoff only a small amount as much of the precipitation was absorbed by the dry soils and was not available for runoff. The snowfall helped spread the moisture over a several day period as the temperatures were too cool to generate much melt. Water levels have increased in most reservoirs during the last two weeks. Most streams have already had their snow-melt peak and will start receding soon unless another moisture laden storm system moves into the state.

Shortages of irrigation water are still expected to occur in most areas except where adequate water is available from reservoir storage.

### MOUNTAIN SNOWPACK

Even though considerable snow fell during recent storms, the snowpack remains below average. This is the result of low snowpack accumulation this winter and considerable melt during the first part of May. Cool weather during the last two weeks has retarded snowmelt where snow remains. In most areas snow remains only in the higher elevations and in protected areas on north facing slopes. Mountain soils are generally wet from recent rainfall and snow-melt.

Valley precipitation was heavy at many climatic stations in the western half of Montana. May precipitation established new records at some stations.

### SNOTEL

Montana is scheduled to install radio telemetry equipment on 18 SNOTEL sites this field season. This will bring the number of automated sites in Montana to 63. Western Union and Soil Conservation Service staff will install telemetry equipment at the following sites:

Barker Lakes southwest of Anaconda  
Basin Creek south of Butte  
Casher Creek south of Bozeman  
Daly Creek east of Hamilton  
Darkhorse Lake west of Dillon  
Emery Creek east of Columbia Falls  
Hoodoo Creek south of Superior  
Kraft Creek northwest of Seeley Lake  
Lower Twin northwest of Ennis  
Monument Peak south of Big Timber  
Mule Creek northwest of Dillon  
Nez Perce Camp southwest of Darby  
Nevada Creek northwest of Helena  
Pike Creek west of East Glacier  
Placer Basin southeast of Livingston  
Skalkaho Summit east of Hamilton  
Skylark Trail northwest of Seeley Lake  
Warm Springs southeast of Philipsburg

Starting July 1, 1980, the SCS will assume all electronic maintenance at SNOTEL sites and will be responsible for their operation. Previously, electronic maintenance was under contract with Western Union and site maintenance was an SCS responsibility.

### AGENCIES & ORGANIZATIONS COOPERATING in Montana Snow Surveys

#### GOVERNMENT AGENCIES

Cooperating Agencies:  
Water Survey of Canada, Department of the Environment, Calgary  
Montana Department of Agriculture, Department of Land, Forests and  
Wildlife Resources, Helena, Montana  
Agricultural Experiment Station, Bozeman

#### United States

Department of Agriculture  
Bureau of Reclamation  
Bureau of Land Management  
Bureau of Indian Affairs  
Bureau of Geographical Names  
Bureau of Entomology and Plant Quarantine  
Bureau of Plant Industry  
Bureau of Soils  
Bureau of Weather Service  
Bureau of Forest Service  
Bureau of Wildlife Service  
Bureau of Reclamation Service

#### STATE OF MONTANA

Department of Agriculture  
Department of Land, Forests & Parks  
Department of Wildlife Resources & Conservation  
Department of Transportation  
Department of Education  
Department of Health

#### PRIVATE ORGANIZATIONS & INDIVIDUALS

Bozeman Water Company  
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# SNOW SURVEY DATA

SNOW		THIS YEAR				PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Water Content (Inches)
NAME						Last Year	Average
ARCH FALLS	7350	5/27	9	1.7	6.6	10.2	
BADGER PASS	6900	5/31	39	19.2	34.1	41.3	
BADGER PASS PILLOW	6900	5/31	SP	10.9	27.8	--	
BANFIELD MOUNTAIN	5600	6/05	0	0.0	0	7.6	
BANFIELD MOUNTAIN PILLOW	5600	6/05	SP	0.0	0	4.2	
BEAGLE SPRINGS	8850	6/01	EST	3.0	1.0	--	
BEAGLE SPRINGS PILLOW	8850	6/01	SP	2.7	.5	--	
BEAR PAW SKI AREA	5200	5/28	0	0.0	--	--	
BIG CREEK	6750	5/31	51	28.5	45.3	44.3	
BLACK BEAR	7950	6/01	EST	23.5	23.0	36.0	
BLACK BEAR PILLOW	7590	6/01	SP	22.8	22.8	30.1	
BLACK PINE	7100	5/29	3	1.2	.6	4.1	
BLACK PINE PILLOW	7100	5/29	SP	2.0	.5	4.4	
BLOODY OICK	7600	6/01	EST	0.0	0.0	--	
BLOODY OICK PILLOW	7600	6/01	SP	0.7	0.0	--	
BLUE LAKE	5900	5/31	0	0.0	10.8	14.7	
BOULDER MOUNTAIN	7950	6/01	EST	8.5	13.0	--	
BOULDER MOUNTAIN PILLOW	7950	6/01	SP	7.1	13.5	--	
BOX CANYON	6670	6/01	EST	0.0	0.0	--	
BOX CANYON PILLOW	6670	6/01	SP	0.0	0.0	--	
BOXELDER CREEK	5100	5/28	0	0.0	--	--	
BRIDGER BOWL	7250	5/28	10	3.1	19.2	23.6	
BRIDGER BOWL PILLOW	7250	5/28	SP	2.6	15.2	19.8	
CALVERT CREEK	6450	6/01	EST	0.0	0.0	--	
CALVERT CREEK PILLOW	6450	6/01	SP	0.0	0.0	0.0	
CHICKEN CREEK	4050	5/27	0	0.0	0.0	--	
CLOVER MEADOW	8600	6/01	EST	6.0	--	--	
CLOVER MEADOW PILLOW	8600	6/01	SP	5.7	7.4	--	
COLE CREEK	7850	5/29	0	0.0	--	19.5	
COLE CREEK PILLOW	7850	5/29	SP	0.0	16.4	18.6	
COMBINATION	5600	5/29	0	0.0	0.0	0.0	
COMBINATION PILLOW	5600	5/29	SP	0.0	0.0	0.0	
COPPER BOTTOM	5200	6/01	EST	0.0	0.0	--	
COPPER BOTTOM PILLOW	5200	6/01	SP	0.0	0.0	0.0	
COPPER CAMP	6950	6/01	EST	0.5	1.9	--	
COPPER CAMP PILLOW	6950	6/01	SP	1.0	--	19.1	
CRYSTAL LAKE	6100	6/01	EST	0.0	0.0	--	
CRYSTAL LAKE PILLOW	6100	6/01	SP	0.0	--	--	
DEADMAN CREEK	6450	6/01	EST	0.0	0.0	.4	
DEADMAN CREEK PILLOW	6450	6/01	SP	0.0	0.0	0.0	
DESERT MOUNTAIN	5600	6/01	EST	0.0	.9	1.4	
DEVILS SLIDE	8100	5/27	40	14.6	21.2	25.5	
DISCOVERY BASIN	7050	5/29	12	3.3	.0	--	
DIVIDE	7800	6/01	EST	1.0	0.0	--	
DIVIDE PILLOW	7800	6/01	SP	1.4	0.0	1.0	
EMERY CREEK	4350	6/01	EST	0.0	0.0	--	
EMERY CREEK PILLOW	4350	6/01	EST	0.0	0.0	--	
FATTY CREEK	5500	5/31	0	0.0	9.7	9.1	
FISHER CREEK	9100	6/01	EST	20.0	33.2	40.1	
FISHER CREEK PILLOW	9100	6/01	SP	21.3	29.2	38.0	
FLATTOP MOUNTAIN PILLOW	6300	6/01	SP	23.7	32.9	48.0	
FOURTH OF JULY	3450	5/30	0	0.0	--	--	
FRIJOY HILL	4620	5/30	0	0.0	--	--	
FROHNER MEADOWS	6480	6/01	EST	0.0	0.0	2.1	
FROHNER MEADOWS PILLOW	6480	6/01	SP	0.0	.1	3.1	
GARVER CREEK	4250	6/05	0	0.0	0.0	.1	
GARVER CREEK PILLOW	4250	6/05	SP	0.0	0.0	.0	
GIBBONS PASS	7100	5/29	8	2.6	--	11.2	
GRAVE CREEK	4300	6/05	0	0.0	0.0	2.1	
GRAVE CREEK PILLOW	4300	6/05	SP	0.0	0.0	0.0	
GRIZZLY PEAK	8400	5/29	25	10.7	--	--	
GUNSLIGHT LAKE	6300	5/31	16	7.8	27.8	35.4	
HAND CREEK	5030	6/01	EST	0.0	.0	--	
HAND CREEK PILLOW	5030	6/01	SP	0.0	0.0	--	
HAWKINS LAKE	6450	6/05	3	1.6	7.6	24.1	
HAWKINS LAKE PILLOW	6450	6/05	SP	1.0	--	23.5	
HEART LAKE TRAIL	4800	5/29	0	0.0	0.0	4.1	
HELL ROARING DIVIDE	5770	LATE DATA			13.6	13.6	
HERRIG JUNCTION	4850	5/27	0	0.0	0.0	--	
HOOD MEADOW	6600	5/27	3	.6	1.2	3.6	
HOODOO BASIN	6000	5/29	44	24.5	28.8	39.0	
HOODOO BASIN PILLOW	6000	6/01	SP	12.9	22.1	33.0	
HOODOO CREEK	5900	5/29	43	23.2	28.9	36.5	
KINGS HILL	7500	5/28	9	2.7	7.8	11.4	
LAKEVIEW RIDGE	7400	6/01	EST	0.0	0.0	--	
LAKEVIEW RIDGE PILLOW	7400	6/01	SP	0.0	0.0	--	
LEMHI RIDGE	8100	6/01	EST	.5	0.0	--	
LEMHI RIDGE PILLOW	8100	6/01	SP	1.0	0.0	2.0	
LICK CREEK	6860	5/27	1	.3	.6	1.3	
LICK CREEK PILLOW	6860	5/27	SP	.1	.3	.7	
LUBRECHT FLUME	4200	6/01	EST	0.0	--	--	
LUBRECHT FLUME PILLOW	4200	6/01	SP	0.0	--	0.0	
MANY GLACIER	4960	6/01	EST	0.0	0.0	--	
MANY GLACIER PILLOW	4960	6/01	SP	0.0	0.0	--	
MAYNARD CREEK	6210	5/28	0	0.0	0.0	4.4	
MAYNARD CREEK PILLOW	6210	5/28	SP	0.0	4.0	4.6	
MOUNT LOCKHART	6400	6/01	EST	1.5	13.0	11.6	
MOUNT LOCKHART PILLOW	6400	6/01	SP	2.0	13.5	13.0	
NEWTON MOUNTAIN	5600	5/30	0	0.0	--	--	
NOISY BASIN	6040	LATE DATA			41.9	43.5	
NOISY BASIN PILLOW	6040	LATE DATA			33.7	31.3	
NORTH FK. ELK CREEK	6250	6/01	EST	0.0	--	2.0	
NORTH FK. ELK CREEK PILLOW	6250	6/01	SP	.2	--	1.6	
NORTH FORK JOCKO	6330	6/05	11	5.5	25.3	29.5	
NORTHEAST ENTRANCE	7400	6/01	0	0.0	.2	.7	
NORTHEAST ENTRANCE PILLOW	7400	6/01	SP	0.0	3.2	0.0	
PETERSON MEADOWS	7200	6/01	3	.6	.8	1.8	
PETERSON MEADOWS PILLOW	7200	6/01	SP	1.3	.4	2.7	
PICKFOOT CREEK	6650	6/01	EST	0.0	0.0	--	
PICKFOOT CREEK PILLOW	6650	6/01	SP	0.0	0.0	--	
POORHAN CREEK	5100	6/05	0	0.0	1.6	11.9	
POORHAN CREEK PILLOW	5100	6/05	SP	0.0	8.3	10.3	
PORCUPINE	6500	6/01	EST	0.0	0.0	--	
PORCUPINE PILLOW	6500	6/01	SP	0.0	0.0	--	
RED MOUNTAIN	6000	5/30	0	0.0	0.0	5.4	
RED TOP	5260	5/30	0	0.0	--	--	
ROCKER PEAK	8000	5/30	13	5.0	9.0	10.5	
ROCKER PEAK PILLOW	8000	5/30	SP	11.6	13.6	15.4	
ROCKY BOY	4700	5/28	0	0.0	0.0	0.0	
ROCKY BOY PILLOW	4700	5/28	SP	0.0	0.0	0.0	
SAGOLE MOUNTAIN	7940	6/01	EST	6.0	14.0	22.4	
SADDLE MOUNTAIN PILLOW	7940	6/01	SP	6.8	13.0	22.5	
SHOWER FALLS	8100	5/27	43	17.1	34.6	29.8	
SHOWER FALLS PILLOW	8100	5/27	SP	13.1	20.7	26.2	
SILVER RUN	6630	6/01	EST	0.0	0.0	1.6	
SILVER RUN PILLOW	6630	6/01	SP	0.0	0.0	--	
SKALKAHU SUMMIT	7260	5/29	17	6.1	12.4	16.6	

SNOW (Con't.)		THIS YEAR				PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Water Content (Inches)
NAME						Last Year	Average
SKALKAHU SUMMIT PILLOW	7260	5/29	SP	12.2	17.1	--	
SPOTTED BEAR MOUNTAIN	7000	5/31	0	0.0	0.0	1.2	
SPUR PARK	8100	6/01	EST	3.0	17.0	18.8	
SPUR PARK PILLOW	8100	6/01	SP	2.9	16.5	18.2	
STAHL PEAK	6050	6/05	20	9.4	25.4	35.8	
STAHL PEAK PILLOW	6050	6/05	SP	16.3	--	30.2	
STRYKER BASIN	6180	5/27	6	2.6	18.5	--	
STUART MOUNTAIN	7400	6/05	10	4.0	18.2	20.2	
SUCKER CREEK	3960	5/28	0	0.0	--	--	
TAYLOR ROAD	4080	5/28	0	0.0	--	--	
TEJEE CREEK	8000	5/29	20	5.8	7.0	11.9	
TEJEE CREEK PILLOW	8000	5/29	SP	4.4	3.0	5.3	
TRINKUS LAKE	6100	5/31	6	2.8	29.7	27.0	
TV MOUNTAIN	6800	6/05	8	3.3	9.3	11.3	
TWELVENILE CREEK	5600	6/01	EST	0.0	0.0	2.6	
TWELVENILE CREEK PILLOW	5600	6/01	SP	0.0	0.0	.9	
TWIN CREEKS	3580	5/31	0	0.0	0.0	0.0	
TWIN LAKES	6510	6/01	EST	20.0	28.0	30.7	
TWIN LAKES PILLOW	6400	6/01	SP	19.1	27.0	28.1	
UPPER HOLLAND LAKE	6200	6/05	0	0.0	23.8	24.8	
WALORON	5600	6/01	EST	0.0	0.0	0.0	
WALORON PILLOW	5600	6/01	SP	0.0	0.0	.2	
WARM SPRINGS	8250	6/01	16	6.7	8.6	--	
WARM SPRINGS PILLOW	8250	6/01	SP	10.8	11.9	--	
WEASLE DIVIDE	5450	6/05	1	0.4	10.9	20.6	
WEST YELLOWSTONE	6700	5/31	0	0.0	--	--	
WEST YELLOWSTONE PILLOW	6700	5/31	SP	0.0	0.0	0.0	
WHISKEY CREEK	6800	6/01	EST	0.0	0.0	2.0	
WHISKEY CREEK PILLOW	6800	6/01	SP	0.0	0.0	1.7	
WHITE MILL	8700	6/01	EST	20.0	26.4	27.6	
WHITE MILL PILLOW	8700	6/01	SP	17.0	17.8	21.0	
WOOD CREEK	5960	6/01	EST	0.0	--	--	
WOOD CREEK PILLOW	5960	6/01	SP	0.0	0.0	--	

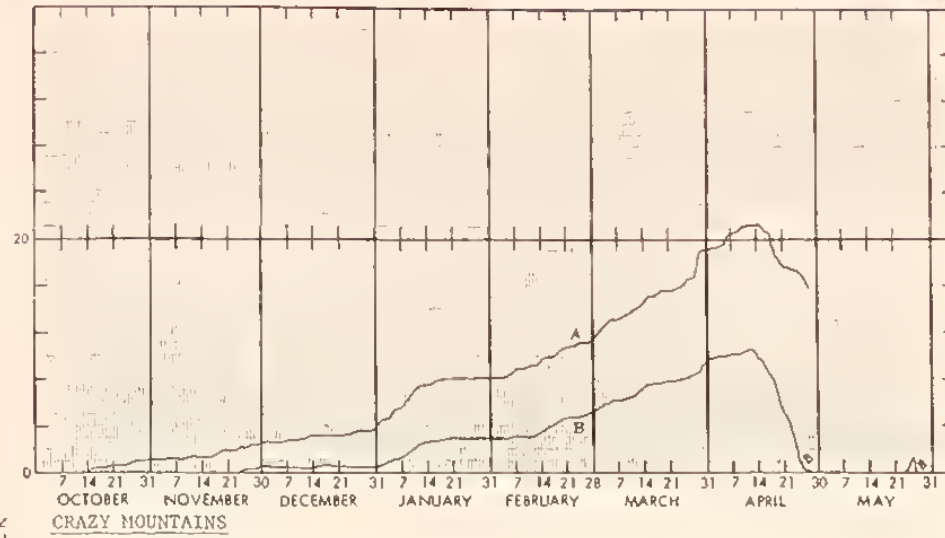
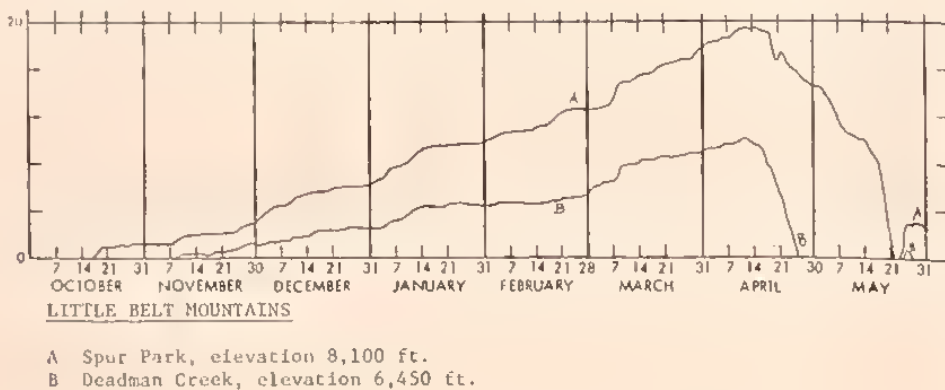
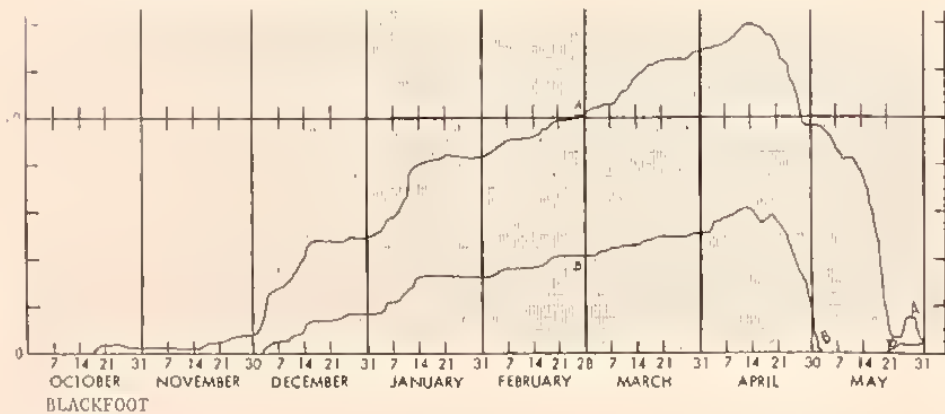
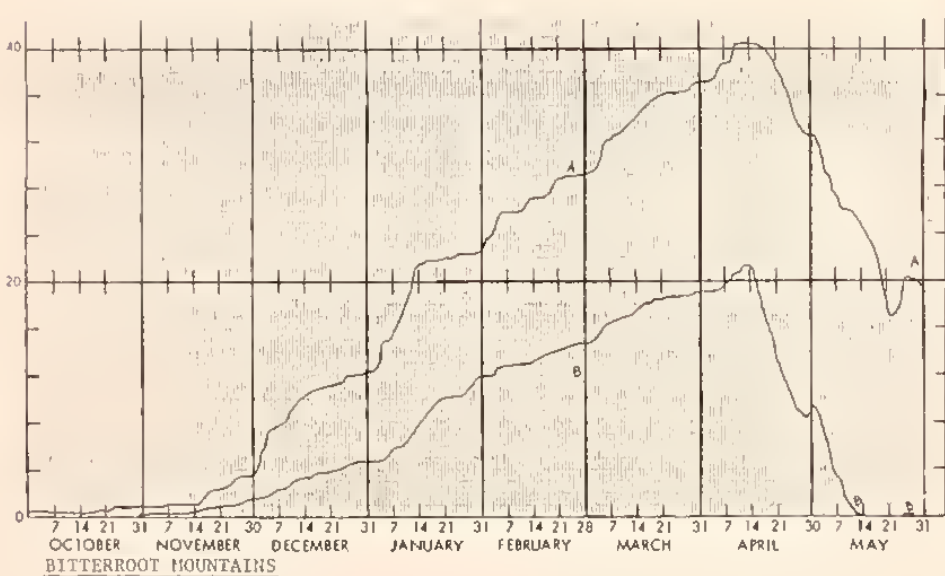
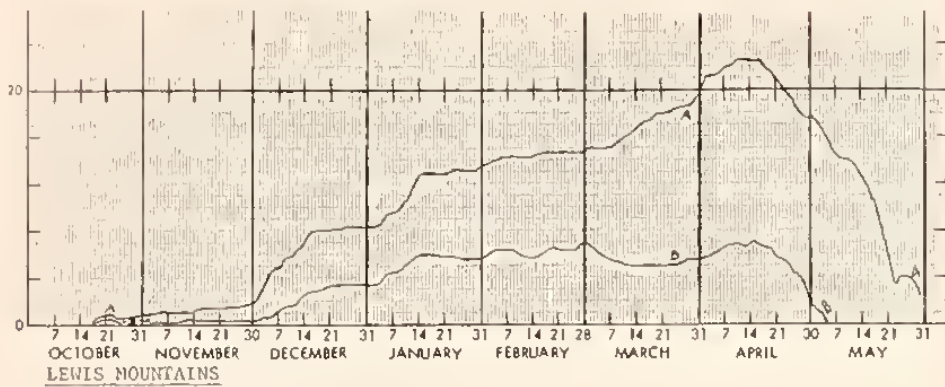
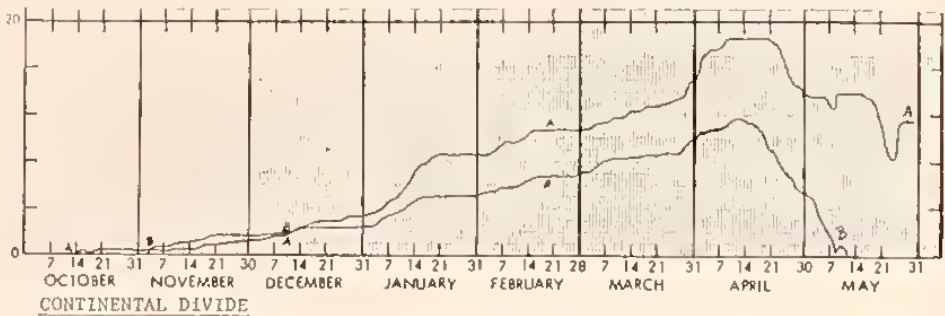
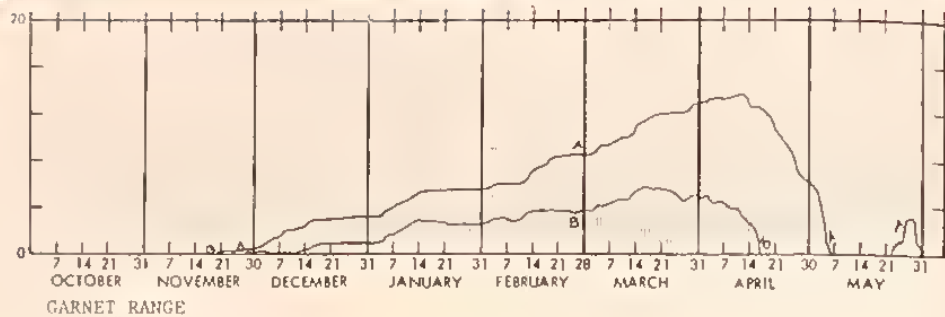
Average based on 1963-77 period. A - Aerial observation; water content estimated.  
SP - Snow Pillow observation; water content only. \* Estimated from SNOTEL.

## CORRECTIONS TO PREVIOUSLY PUBLISHED DATA AND UNPUBLISHED DATA

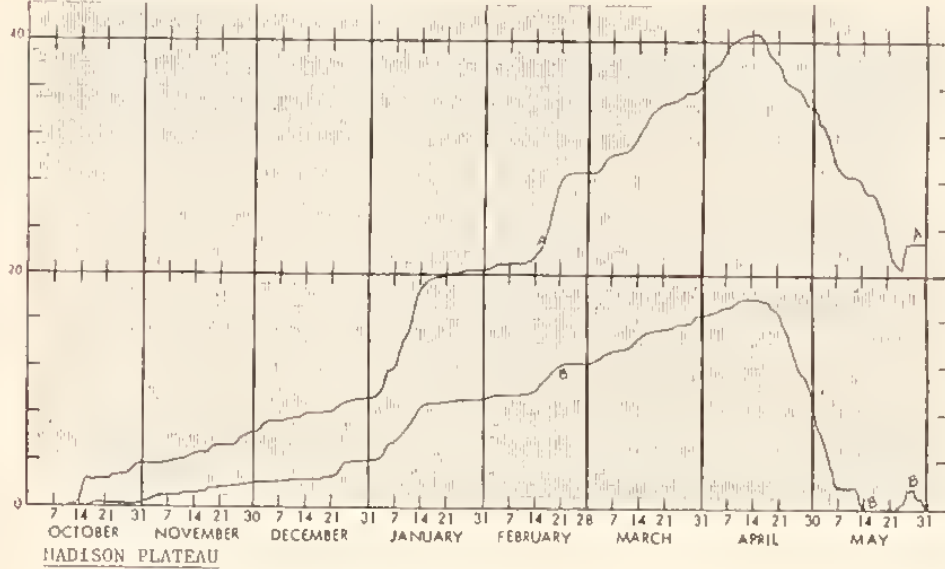
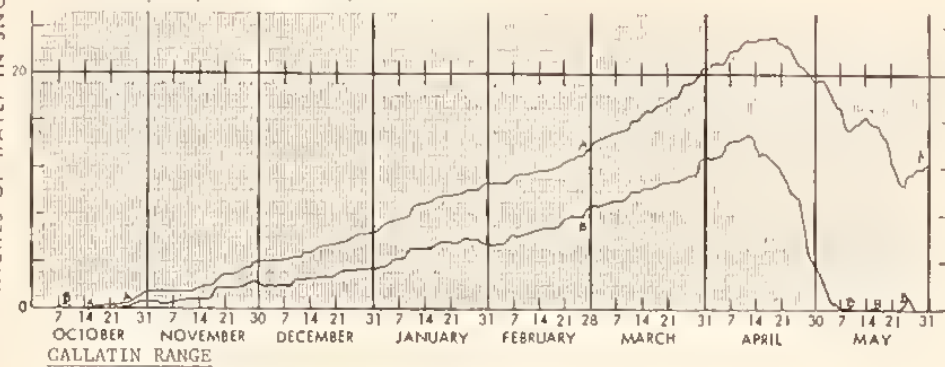
SNOW		THIS YEAR				PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME						Last Year	Average
JANUARY							
Barker Lakes	8250	1/08	23	4.5	--	--	
Battle Ridge	6020	12/27	7	1.1	7.5	3.6	
Blue Lake	5900	12/29	33	8.0A	10.0	10.8	
Dix Hill	6400	12/30	9	1.7	6.5	5.1	
Lake Creek	6100	12/26	16	2.5	3.8	4.8	
Maynard Creek	6210	12/27	9	1.7	10.9	5.5	
FEBRUARY							
Bull Mountain	6600	2/04	12	2.1	7.2	2.6	
Carter Creek	7400	2/03	16	3.0	3.9	4.0	
Dix Hill	6400	2/03	17	4.3	8.7	8.2	
Emery Creek	4350	1/29	26	6.1	10.0	11.9	
Fleecer Ridge	7500	2/04	30	5.0	8.2	8.3	
Hebgen Dam	6550	1/30	26	6.2	7.1	8.9	
Holbrook	4530	1/27	26	5.0A	7.5	7.7	
Maynard Creek	6210	1/30	23	6.0	13.2	10.1	
New World	6900	1/31	31	8.4	10.6	10.7	
Shower Falls	8100	1/29	43	12.1	13.7	17.5	
Twenty-one Mile	7150	1/29	33	7.1	9.6	13.6	
MID-FEBRUARY							
Hoodoo Basin	6000	2/15	97	34.0	38.4	--	
Hoodoo Creek	5900	2/15	90	30.5	36.0	--	
Tecue Creek	8000	2/14	33	9.0	--	--	



# SNOW PILLOW DATA



INCHES OF WATER IN SNOWPACK



INCHES OF WATER IN SNOWPACK

